

CONTINUITY SHEET FOR REEL #11.

✓ "ELEMENTS OF THE AUTOMOBILE" ✓

MAY -2 1921

M T

Part 11 ✓

M T

The Bray Pictures Corporation  
presents  
"ELEMENTS OF THE AUTOMOBILE"  
by  
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assisted by  
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M T.

Produced for  
The Education  
and Recreation Branch  
General Staff  
under the supervision  
of the  
Motor Transport Division  
Quartermasters Corps  
United States Army.

Reel

M S

Transmission.

Sub

It is harder to move an automobile under some conditions than it is under others.

Sub

✓ Notice how hard the men in the picture must work to get the truck in motion.

Sc 1

Truck at rest. Three men begin pushing it.

Sub

As the truck begins to move it becomes easier to keep it moving.

Sc 2

Men pushing truck.

Sub

The faster it moves the easier it is to keep it moving.

Sc 3

Men pushing truck at a fast pace.

Sub

Up hill, the work is very hard.

Sc 4

Men pushing truck up hill.

Sub

These men have illustrated the changing conditions under which the engine must operate. In meeting the hardest of these conditions, the engine may be assisted by the use of gears.

Sub

For example, this engine (with the arrangement shown) can just move the weight.

- Sc 5 Engine in section, pulley and one weight. Action of engine. Clutch is let in, weight moves length of supposed platform.
- Sub If it had to move two of these weights it would stall.
- Sc 6 Engine, pulley and one weight. Another weight dissolves in. Action of engine. Clutch is let in. Weights are pulled a short way and then the engine stalls.
- Sub But by using the right gears, the two weights can be moved easily.
- Sc 7 Engine, pulley, two to one gears and two weights. Action of engine; clutch is let in. Weights are moved the entire length of supposed platform.
- Sub Three or more weights can be moved by using the right gears.
- Sc 8 Engine, pulley, three to one gears and three weights. Action of engine. Clutch is let in. Weights move entire length of supposed platform.
- Sub As you have just seen, the right gearing will produce more force than the engine could exert by itself.
- Sub In the automobile, gears used for this purpose are conveniently arranged in a device called the gearset.
- Sc 9 Engine on platform. No gears, pulley or weights. External view of gearset dissolves on. Flash to close up. Dissolve to complete section.
- Sub They may be shifted to various positions.
- Sc 10 Long shot of engine, gearset in section. Pointer indicates gear shift lever. Lever shifts gears in proper order-1, 2, 3. Flash to close up of same action repeated.
- Sub If the work is very hard the gears are adjusted accordingly. (Notice that the four weights are pulled very slowly)
- Sc 11 Engine on platform, gears enclosed, cylinders are in section. Four weights and pulley dissolve in. Clutch is thrown out; engine started; shift is made into first speed. Clutch is let in; weights move along slowly.
- Sub Another adjustment is made if the work is easier.



(Notice that the two weights are pulled much faster).

- Sc 12 Two weights dissolve out. Necessary adjustments are made and the two weights move faster than the weights in the last scene.
- Sub Still another adjustment may be made if the work is still easier. (Notice that the weight is pulled much faster).
- Sc 13 Two weights. Dissolve out one. Engine starts. Shift is made to high. Clutch is let in. Weight moves entire length of supposed platform.
- Sub A simple engine will be used to show what the gears do.
- Sc 14 Our first simple engine. Action of piston. (No explosions).
- Sub When gearing is used to gain force, the larger gear turns slower.
- Sc 15 First crankshaft. Gear dissolves in, then the larger gear dissolves in. (No action.)
- Sub If the big gear has twice as many teeth as the smaller one it will turn at one half the speed of the small one.
- Sc 16 Simple engine with 2 to 1 gears. Pointer indicates teeth. Indicators dissolve in. Action (without explosions). One revolution. Numbers 1 and  $\frac{1}{2}$  flash in. Pause.
- Sub It takes two revolutions of the small gear to make one revolution of the large
- Sc 17 Numbers flash out. Crank makes another revolution. Numbers 2 and 1 flash in. Numbers flash to 1 and  $\frac{1}{2}$ . They flash out. Crank makes another revolution and numbers 2 and 1 flash in.
- Sub  
Animated The big gear is turning with one-half the speed but TWO TIMES THE FORCE of the smaller gear.
- Sc 18 Simple engine with two to one gearing and indicators. Action for several revolutions.
- Sub If a gear with three times as many teeth were used, it would turn with one-third the speed.
- Sc 19 Simple engine with 2 to 1 gearing. Large gear dissolves out. A larger gear dissolves in. Crank makes one revolution. Numbers 1 and  $\frac{1}{3}$  flash in. Crank makes another revolution. Numbers 2 and  $\frac{2}{3}$  flash in. Crank makes another revolution and numbers

3 and 1 flash in. The above action is repeated.

Sub  
Animated

This big gear turns at one-third the speed, but  
THREE TIMES THE FORCE of the smaller gear.

Sc 20

Simple engine with 3 to 1 gears and indicators.  
Makes several revolutions (no numbers).

Sub  
Animated.

The important thing to remember is that GEAR -  
ING WHICH DELIVERS LOWER SPEED, DELIVERS MORE  
FORCE in proportion.

Sub

Thus when the gearset is adjusted for extra force  
the rear wheels turn very slowly.

Sc 21

Long shot of car. Fade in cylinders in section.  
Clutch is thrown out. Shift to first is made and  
wheels move slowly.

Sub

When the gearset is adjusted for easier work  
(less force) the wheels turn faster.

Sc 22

Long shot of car. Cylinders in section. Shift is  
made to 3rd. Wheels turn much faster than in the  
preceding scene. Fade out.

Sub

End of Part 11

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